

Additional *Legionella* Frequently Asked Questions

How can facilities prevent *Legionella* growth?

Make Sure Disinfectant Amounts Are Right

When there is a reduction in disinfectant levels in your building water systems, *Legionella* can grow. In some buildings, processes such as heating, storing, and filtering can reduce the amount of available disinfectant, allowing *Legionella* to grow if steps are not taken to stop it. Long-term supplemental disinfection to help limit *Legionella* growth should be considered a last resort. Examples of potentially applicable supplemental disinfection practices would include disinfection with free chlorine, monochloramine, chlorine dioxide, ozone or ultraviolet light. While ultraviolet light may provide supplemental disinfection, it will not add a disinfectant to the water nor will it establish a disinfectant residual.

Health care facilities should work closely with their public water supply system to address water quality issues. Secondary treatment within a health care facility will result in the creation of a new public water supply system that will be regulated by the Kansas Department of Health and Environment (KDHE) Public Water Supply Section. Addition of secondary treatment requires KDHE approval prior to installation.

Make Sure Water Temperatures Are Right

Legionella grows best within a certain temperature range (77°F-108°F). To keep water outside the range for *Legionella* growth, it is important to keep cold water cold and keep hot water hot.

- A note about cold water: In warm climates, water in pipes that carry cold water may reach a temperature that allows *Legionella* to grow.
- A note about hot water: It is important to maintain water heaters at appropriate temperatures while following local and state anti-scald regulations. Sometimes maximum temperatures allowed by your state may be too low to limit *Legionella* growth. Engineering controls that mix hot and cold water together at or near the point of use can reduce the risk of scalding while allowing water in pipes to remain hot enough to limit *Legionella* growth.

Prevent Stagnation

When water does not flow well, the resulting areas of stagnation encourage biofilm growth, reduce water temperatures to levels that allow *Legionella* to grow, and reduce levels of

disinfectant. It is important to understand the flow of water in your building to identify areas of risk where water may become stagnant.

Operate and Maintain Equipment

Maintaining and operating your building's equipment effectively will help prevent biofilm, organic debris, and corrosion from contaminating your water system; these provide a habitat and nutrients for *Legionella*.

Monitor External Factors

It is important to monitor external factors that may affect the water entering a building and increase the growth of *Legionella* in complex water systems. Construction, water main breaks, and changes in municipal water quality are all important factors to consider. Similarly, monitor modifications and breaks within the building as they have the potential to also contribute to the growth of *Legionella*.

Where can *Legionella* grow or spread?

Legionella can grow in many parts of building water systems that are continually wet. Certain devices can then spread contaminated water droplets. Some examples of devices where *Legionella* can grow and spread through aerosolizing or aspiration include:

- Hot and cold water storage tanks
- Water heaters
- Water hammer arrestors
- Expansion tanks
- Water filters
- Electronic and manual faucets
- Aerators
- Faucet flow restrictors
- Showerheads and hoses
- Pipes, valves, and fittings
- Centrally installed misters, atomizers, air washers, and humidifiers
- Nonstream aerosol-generating humidifiers
- Infrequently used equipment including eyewash stations
- Ice machines

- Hot tubs
- Decorative fountains
- Cooling towers
- Medical equipment (such as CPAP machines, hydrotherapy equipment, bronchoscopes)

Are certain people at increased risk of infection?

Most healthy people exposed to *Legionella* do not get sick. People at increased risk of getting sick are:

- People 50 years or older
- Current or former smokers
- People with a chronic lung disease (like chronic obstructive pulmonary disease or emphysema)
- People with weak immune systems or who take drugs that weaken the immune system (like after a transplant operation or chemotherapy)
- People with cancer
- People with underlying illnesses such as diabetes, kidney failure, or liver failure

What are some waterborne risks beyond *Legionella*?

Many of the environmental factors that encourage *Legionella* growth also allow for growth of other are germs that grow well in drinking water distribution systems, such as *Pseudomonas* and nontuberculous mycobacteria.